

Title (en)  
CRYOGENIC BALLOON ABLATION SYSTEM

Title (de)  
KRYOGENES BALLONABLATIONSSYSTEM

Title (fr)  
SYSTÈME D'ABLATION À BALLONNET CRYOGÉNIQUE

Publication  
**EP 3294170 A4 20190130 (EN)**

Application  
**EP 16796979 A 20160512**

Priority  
• US 201514714101 A 20150515  
• US 2016032125 W 20160512

Abstract (en)  
[origin: US9414878B1] A cryogenic ablation catheter includes a catheter shaft, a balloon and a connector respectively at the catheter shaft proximal and distal ends, a refrigerant delivery tube assembly including a refrigerant delivery tube translatable within the catheter shaft lumen, and a refrigerant delivery element with an outlet located inside the balloon which directs refrigerant outwardly against the balloon at different axial positions as it translates. A cryogenic balloon ablation system includes the cryogenic ablation catheter, a catheter coupler mating with the connector, a linear motion assembly, and a connection line fluidly coupled to a refrigerant fluid source for supplying refrigerant fluid to the refrigerant delivery tube.

IPC 8 full level  
**A61B 18/02** (2006.01); **A61M 25/10** (2013.01)

CPC (source: CN EP US)  
**A61B 18/02** (2013.01 - EP US); **A61B 18/12** (2013.01 - CN); **A61B 18/1492** (2013.01 - CN); **A61B 90/98** (2016.02 - EP US);  
**A61B 2018/00011** (2013.01 - CN); **A61B 2018/00196** (2013.01 - US); **A61B 2018/0022** (2013.01 - CN EP US);  
**A61B 2018/00488** (2013.01 - CN EP US); **A61B 2018/00494** (2013.01 - CN); **A61B 2018/00577** (2013.01 - EP US);  
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**A61B 2018/00982** (2013.01 - CN); **A61B 2018/0212** (2013.01 - EP US); **A61B 2018/0262** (2013.01 - US)

Citation (search report)  
• [XAI] US 2015126985 A1 20150507 - NEWELL GABRIEL FRANCIS W [US], et al  
• [XI] US 2005209587 A1 20050922 - JOYE JAMES [US], et al  
• See references of WO 2016186964A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**US 9414878 B1 20160816**; CN 107530116 A 20180102; CN 107530116 B 20190423; CN 110051420 A 20190726; CN 110051420 B 20210824;  
EP 3294170 A1 20180321; EP 3294170 A4 20190130; EP 3294170 B1 20200226; JP 2018196773 A 20181213; JP 2018516660 A 20180628;  
JP 6403031 B2 20181010; JP 6738869 B2 20200812; US 10098686 B2 20181016; US 2016331433 A1 20161117; WO 2016186964 A1 20161124

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**US 201514714101 A 20150515**; CN 201680024610 A 20160512; CN 201910265462 A 20160512; EP 16796979 A 20160512;  
JP 2017559683 A 20160512; JP 2018161000 A 20180830; US 2016032125 W 20160512; US 201615211365 A 20160715